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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/877,259	06/11/2001	Michael Schmidt	MERCK-2272	8004

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EXAMINER

SMALL, ANDREA D SOUZA

ART UNIT	PAPER NUMBER
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1626

DATE MAILED: 12/17/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/877,259

Applicant(s)

SCHMIDT ET AL.

Examiner

Andrea D Small

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) parts of 1-7, 12-15 and 19-20 and claims 8-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 12-15, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) parts of 1-7, 12-15 and 19-20 and claims 8-11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***I. Preliminary Matters:***

(a) Applicants response of 7/21/2003 has been received and entered as paper no. 8.

-Claims 14-20 are newly added.

-Claims 1-20 are pending.

### ***II. Remarks:***

(a) Restriction/Election:

Applicants traversed the restriction requirement by stating that “none of claims 8-11 are process claims”, thus the restriction is in error and should be withdrawn.

The examiner respectfully disagrees. The indication that claims 8-11 are process claims was not made. The reference to process with regard to claims 8-11 was made with regard to the relationship between group I to groups II and III. Group II and III are drawn to electrochemical cells and capacitors respectfully that employ the ionic liquid of Group I in them, hence they are in fact is a process for using the compounds of group I. Thus, the characterization of the relationship between these groups is accurate and the restriction as outlined is proper and maintained.

Claims 12-13 fall within group I, newly added claims 16-18 are drawn to group II, while newly added claims 14-15 and 19-20 are drawn to group I.

As per the restriction and election requirements, claims 8-11 and 16-18 and parts of claims 1-7, 12-15 and 19-20, that are not drawn to the elected group I, nor the generic concept, page 3, paragraph (c) of office action dated 4/21/2003, are withdrawn from consideration as being drawn to non-elected inventions. 37 CFR 1.142(b).

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(b) Rejection under 35 USC 103(a):

The gist of Applicants traversal is on the grounds that “nothing within the disclosure of US’602 provides any suggestion or motivation that would lead one of ordinary skill in the art to select a cation and anion combination from the numerous possibilities so as to arrive at an ionic liquid as applicants claim”. *In re Baird*, 29 USPQ2d 1550 (Fed. Cir. 1994).

The examiner respectfully disagrees. The reference specifically indicates preferences for anions and cations in the ionic liquid. Col. 3, lines 50-60 specifically indicate the preferred anions and col. 2, lines 19-6. specifically indicate the preferred cations. Additionally, col. 4, lines 20-25 states that preferred cations as being 1-ethyl-3-methyl imidazolium or DMPI, see col. 4, line 65. The preferred anions are specifically indicated in cols. 3, lines 50-60, where it is stated that the anion can be any one of (CF<sub>3</sub>)<sub>2</sub>PF<sub>4</sub><sup>-</sup>, (CF<sub>3</sub>)<sub>3</sub>PF<sub>3</sub><sup>-</sup>, (CF<sub>3</sub>)<sub>4</sub>PF<sub>2</sub><sup>-</sup>, (CF<sub>3</sub>)<sub>5</sub>PF<sup>-</sup> and (CF<sub>3</sub>)<sub>6</sub>P<sup>-</sup>. With this teaching and suggestion, one of ordinary skill in the art would be motivated to make additional electrochemically useful ionic liquids from imidazolium cations and perfluoronated anions with the expectation that an ionic liquid produced therefrom would have additional special properties including resistance to extremes of temperature and pressure, resistance to corrosive acids and bases and inertness to organic solvents and oxidizing agents. See col. 4, lines 40-55. Therefore, the 35 USC 103(a) rejection of claims 1-7, 12-13 and newly added claims 14-15 and 19-20 is maintained.

**III. Objections:**

Claims 1-7, 12-15 and 19-20 are objected to for containing non-elected subject matter. Claims 8-11 are objected to for being drawn to non-elected subject matter. 37 CFR 1.142(b).

**IV. Maintained Rejections:**

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-7 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koch, et al.

Applicants claims are drawn to an ionic liquid of formula in claim 1 wherein K<sup>+</sup> is an imidazolium and A<sup>-</sup> is a [PF<sub>x</sub>(CyF<sub>2y+1-z</sub>H<sub>z</sub>)<sub>6-x</sub>]<sup>-</sup>.

*Determination of the scope and content of the prior art (MPEP §2141.01)*

The prior art discloses an ionic liquid wherein the cation is an imidazolium and the anion is selected from (CF<sub>3</sub>)<sub>2</sub>PF<sub>4</sub><sup>-</sup>; (CF<sub>3</sub>)<sub>3</sub>PF<sub>3</sub><sup>-</sup>; (CF<sub>3</sub>)<sub>2</sub>PF<sub>2</sub><sup>-</sup>; (CF<sub>3</sub>)PF<sup>-</sup>. See claim 1 and claim 11. See also Example V and Table 3, line 8. Specific examples of cation that falls under the genus of the instantly claimed genus for the cation and anion that falls under the genus of the instantly claimed genus of the anion.

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Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)

The difference between the prior art and the instant claims, if any, is that the prior art does not specifically exemplify the cation and anion disclosed together in the same example.

Finding of prima facie obviousness---rationale and motivation (MPEP §2142-2413)

However, it would be prima facie obvious for one of ordinary skill in the art to make additional useful electrochemical ionic liquid as is instantly claimed by employing the cations and anions specifically taught and preferred in the Koch reference, see col. 3, lines 50-60 and col. 2 lines 19-63, because the cations and anions taught and disclosed in Koch specifically disclose that these anions and cations have improved properties in non-aqueous batteries, electrochemical capacitors, etc. See col. 1-col. 2 and col. 4.

***V. Finality:***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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***VI. Contact Information:***

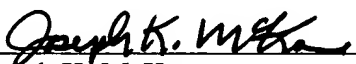
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrea D. Small, whose telephone number is (703) 305-0811. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Joseph K. McKane, can be reached at (703) 308-4537. The Unofficial fax phone number for this Group is (703) 308-7921. The Official fax phone numbers for this Group are (703) 308-4556 or 305-3592.

When filing a FAX in Technology Center 1600, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [Joseph.McKane@uspto.gov]. All Internet e-mail communications will be made of record in the application file. PTO employees will not communicate with applicant via Internet e-mail where sensitive data will be exchanged or where there exists a possibility that sensitive data could be identified unless there is of record an express waiver of the confidentiality requirements under 35 U.S.C. 122 by the applicant. See the Interim Internet Usage Policy published by the Patent and Trademark Office Official Gazette on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-1234

ADS  
December 15, 2003

  
\_\_\_\_\_  
Joseph K. McKane  
Supervisory Patent Examiner  
Art Unit 1626  
Technology Center 1